IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA

STATE OF OKLAHOMA,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	
	)	Case No. 05-CV-329-GKF-PJC
TYSON FOODS, INC., et al.,	)	
	)	
Defendants.	)	

ORDER

This matter comes before the court on the State of Oklahoma's Motion in Limine to Preclude Opinion Testimony of Defendants' Witness, Andy Davis, Ph.D. [Doc. No. 2064].

Dr. Davis conducted work on behalf of the Cargill defendants to determine whether State data show if specific Cargill locations were responsible for any elevated phosphorus levels in Lake Tenkiller and/or the Illinois River Waterway. The State has challenged his opinion on the basis that his methodology was flawed.

I. Legal Standard

Federal Rule of Evidence 702 provides:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods to the facts of the case.

Thus, Rule 702 imposes on the trial judge an important "gate-keeping" function with regard to the admissibility of expert opinions. *Ralston v. Smith & Nephew Richards, Inc.*, 275 F.3d 965, 969 (10th Cir. 2001).

First, the court must determine whether the expert is qualified by "knowledge, skill,

experience, training, or education" to render an opinion. *Id.* An expert witness is qualified under Rule 702 when he possesses "such skill, experience or knowledge in that particular field as to make it appear that his opinion would rest on substantial foundation and would tend to aid the trier of fact in his search for the truth." *Graham v. Wyeth Labs.*, 906 F.2d 1399, 1408 (10th Cir. 1990).

Second, the court must ensure that the scientific testimony being offered is not only relevant, but reliable. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993). The Tenth Circuit has stated:

> To be reliable under *Daubert*, an expert's scientific testimony must be based on scientific knowledge, which implies a grounding in the methods and procedures of science based on actual knowledge, not subjective belief or unsupported speculation. In other words, an inference or assertion must be derived by the scientific method...[and] must be supported by appropriate validation–*i.e.* good grounds based on what is known. While expert opinions must be based on facts which enable [the expert] to express a reasonably accurate conclusion as opposed to conjecture or speculation...absolute certainty is not required. The plaintiff need not prove that the expert is undisputably correct or that the expert's theory is generally accepted in the scientific community. Instead, the plaintiff must show that the method employed by the expert in reaching the conclusion is scientifically sound and that the opinion is based on facts which satisfy Rule 702' reliability requirements.

Dodge v. Cotter Corporation, 328 F.3d 1212, 1222 (10th Cir. 2003) (citations omitted).

In *Daubert*, the Supreme Court identified four nonexclusive factors the trial court may consider to assist in the assessment of reliability:

> (1) whether the opinion at issue is susceptible to testing and has been subjected to such testing;
>
> (2) whether the opinion has been subjected to peer review;
>
> (3) whether there is a known or potential rate of error associated with the methodology used and whether there are standards controlling the technique's operations; and

(4) whether the theory has been accepted in the scientific community.

Daubert, 509 U.S. at 593-94. This list is not exclusive, and district courts applying *Daubert* have broad discretion to consider a variety of other factors. *Dodge*, 328 F.3d at 1222, citing *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999).

To be relevant, the testimony must "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed.R.Evid. 702. This consideration has been described as one of "fit." *See Daubert*, 509 U.S. at 591. "'Fit' is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes." *Id.*

In sum, the objective of the gate keeping requirement "is to ensure the reliability and relevancy of expert testimony. It is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire*, 526 U.S. at 152.

II. Analysis

Dr. Davis' Expert Report [Doc. No. 2186, Ex. A, p. 2] sets out his methodology. He obtained the State database for the IRW and evaluated the surface water and sediment data upstream and downstream of the Cargill locations. Geomega analyzed the data provided by the State in an Access database. Geomega used the analytical results as provided by the State and did not add new data from outside sources, did not collect new data, and did not assess or endorse the quality of the State data, fieldwork, or sampling protocols.

Cargill provided Davis with information about its 35 locations. Davis reviewed soil,

groundwater, sediment, and surface water data (where collected) in the vicinity of the Cargill locations to evaluate whether the State's data show that phosphorus in sediments and surface water beneath the confluence with a potential receiving water (1) exceeded upstream concentrations, and (2) is attributable to a local Cargill location. [Doc. No. 2186, Ex. A, p. 2]. Based on Davis' analysis, he categorized the Cargill locations and drew several conclusions, the most significant being that phosphorus concentrations in the areas around Cargill locations appeared *not* to have been affected by those locations. [Doc. No. 2186, Ex. A, p. ES-1].

The Cargill defendants argue the Davis study reveals two major flaws in the State's approach: First, the State itself failed to undertake site-specific analysis particular to them or any defendant, instead taking the position that the IRW is a homogenous region, where every defendants' contract growers' locations are identical, and the litter applied anywhere on any of the land will necessarily run off and transport phosphates to the waters of the IRW. Defendants contend that Davis' site-by-site analysis of each of the Cargill-related locations demonstrates the fallacy in the State's logic and reveals a key flaw underlying the opinions of virtually all of the State's experts. Second, the State has failed to quantify other anthropogenic (human) sources of phosphorus compounds found in the IRW.

The State contends Davis' methodology was flawed because he did not determine whether poultry waste from the Cargill Defendants' birds had in fact been land applied in the specific fields. [Doc. No. 2064, p. 5]. In other words, unless it can be established the Cargill defendants were disposing of poultry litter on their own property, the statistics produced by Davis are meaningless.

There is no dispute Davis did *not* conduct an inquiry into the issue of whether each of the

35 sites was disposing of poultry litter on their property. The State has taken the position in this lawsuit that all poultry growers are disposing of poultry litter on their own property, and the Cargilll defendants, in turn, adopted this assumption for purposes of Davis' work. The correctness of this assumption is not before the court in this motion. The court notes, however, that the validity of this assumption may ultimately affect the usefulness or relevance of the Davis study. With this caveat in mind, the court finds the assumption is not fatal to the admissibility of Davis' opinion.

The second defect alleged by the State is Dr. Davis' use of both wet weight concentrations and dry weight concentrations of poultry litter in performing his calculation of sediment baseline phosphorus concentrations. The State, citing a new Roger Olsen declaration, which has been ruled permissible in connection with this motion, argues that dry weight concentrations are universally used for comparison purposes and statistical evaluations because they are much more consistent than wet weight concentrations. [Doc. No. 2064, Ex. 3, Olsen Dec., ¶5].

However, Dr. Davis' Report makes it clear that he used wet weight concentrations in connection with his efforts to determine a screening criterion for baseline. [Doc. No. 2186, p. 12; Ex. A, Davis Report, pp. 3-4]. Moreover, the defendants take the position that the use of dry weight sediment concentrations is *not* mandatory; the important point is that the analysis be consistent. In other words, an "apples to apples" comparison must be made–either wet weight to wet weight or dry weight to dry weight. [Doc. No. 2186, p. 13, Ex. G., Davis Dec., ¶7]. Further, Dr. Olsen himself used both wet and dry weights in his summary of total phosphorus concentrations in sediments. [Doc. No. 2089, Olsen Rep., Table 18 at App. D, 2089-2]. The issue of whether dry weight concentrations or wet weight concentrations should be used is, in the

court's view, a subject open to debate among the experts at trial. Dr. Davis' use of wet weight concentrations does not, therefore, render his methodology unreliable in terms of a *Daubert* evaluation.

III. Conclusion

Having concluded that Dr. Davis' Report passes the *Daubert* test, the court hereby denies the State's motion in limine to exclude Dr. Davis' testimony [Doc. No. 2064].

ENTERED this 10th day of August, 2009.

Gregory K. Frizzell
United States District Judge
Northern District of Oklahoma